

## WHAT IS CLAIMED IS:

1. A microporous composite membrane comprising a microporous polyolefin membrane and a porous coating layer of a gelable fluoro-resin formed on at least one surface of said microporous polyolefin membrane, said  
5 coating layer having cylindrical penetrating pores.
2. The microporous composite membrane according to claim 1, wherein said penetrating pores have an average diameter of 0.1-50  $\mu\text{m}$ .
3. A method for producing the microporous composite membrane recited in claim 1 or 2, comprising the steps of coating at least one surface of a  
10 microporous polyolefin membrane with a solution of a gelable fluoro-resin in a mixed solvent of a good solvent for the fluoro-resin, and a poor solvent having a dipole moment of 1.8 Debye or less, and drying it to form a porous coating layer of said fluoro-resin.
4. A battery separator constituted by the microporous composite  
15 membrane recited in claim 1 or 2.
5. A battery comprising a separator constituted by the microporous composite membrane recited in claim 1 or 2.